

Name: _____ TP: _____

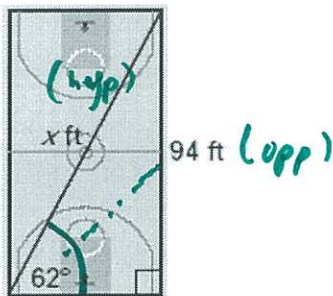
Anything not finished in class becomes homework!

CRS	FUN 502 Express sine, cosine, and tangent of an angle in a right triangle as a ratio of given side lengths; FUN 602 – Apply basic trigonometric ratios to solve right triangle problems
Objective	10.4 Write a ratio for sine, cosine, and tangent when side lengths are variables or number values given a figure, given a word problem, given one of the side length ratios; -> given the angle measure and one side length of a right triangle, find the side length of the triangle

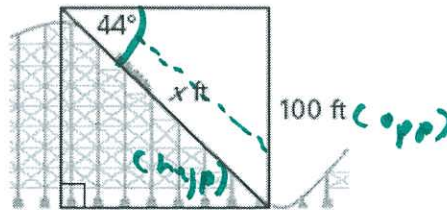
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1) 	2) 	3)
4) 	5) 	6)

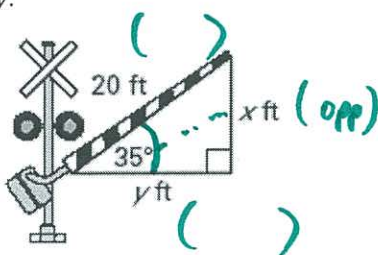
1) You walk from one corner of a basketball court to the opposite corner. Write and solve a proportion using a trigonometric ratio to approximate the distance of the walk.



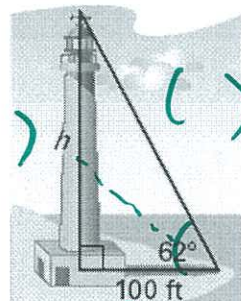
2) You are at the top of a roller coaster 100 feet above the ground. The angle of depression is 44°. About how far do you ride down the hill?



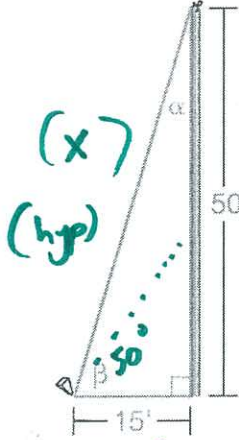
3) A railroad crossing arm that is 20 feet long is stuck with an angle of elevation of 35°. Find the lengths x and y.



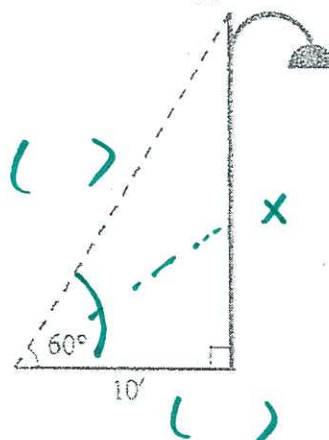
4) Find the height h of the lighthouse to the nearest foot.



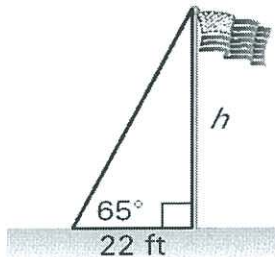
5) A wire is tied from the top of a 50 foot pole to a point on the ground, 15 feet away from the pole. If $\beta = 50^\circ$, what is the length of the wire?



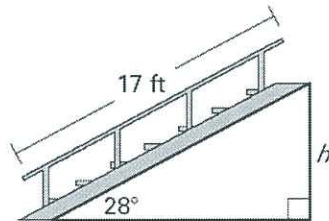
6) A lamppost, shown below, casts a 10ft. shadow when the sun is at a 60° angle with the ground. What is the height of the lamppost?



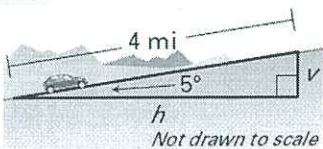
7) To calculate the height h of a flagpole, you move 22 feet from the base and record the angle of elevation to the top to be 65° . Find the flagpole's height to the nearest foot.



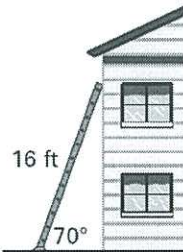
8) A staircase has an angle of elevation of 28° and covers a total distance of 17ft. To the nearest foot, what is the vertical height h covered by the staircase?



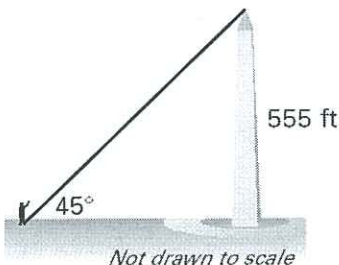
9) You are traveling along a stretch of highway that has a slight grade with an angle of inclination of 5° . After traveling for 4 miles, what is the vertical v and horizontal h change in feet? (1 mi = 5280 ft). Round your answer to the nearest foot.



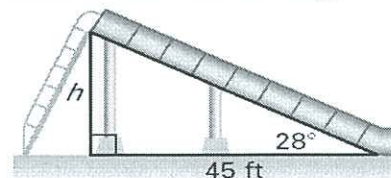
10) You lean a 16 foot ladder against the wall. If the ladder makes an angle of 70° with the ground, how far away from the wall is the base of the ladder? Round your answer to the nearest tenth of a foot.



11) You are standing near the Washington Monument which is 555 feet tall. The angle of elevation from your position to the top of the monument is 45° . How far are you from the monument?



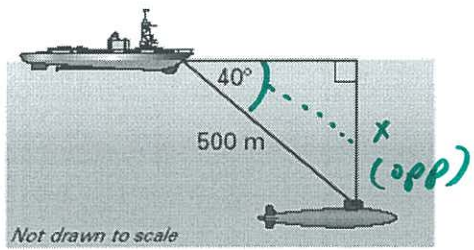
12) The angle of elevation from the base to the top of a water slide is about 28° . The horizontal length of the slide is about 45 feet. Find the height h of the slide.



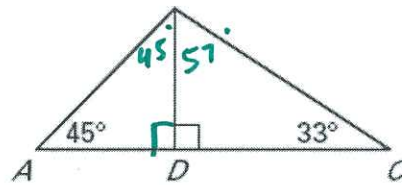
13) A sonar operator on a ship detects a submarine at

14) In the diagram below, $BC = 110$ inches. What is the

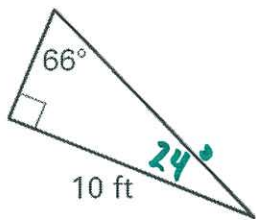
a distance of 500 meters and an angle of depression of 40° . How deep is the submarine?



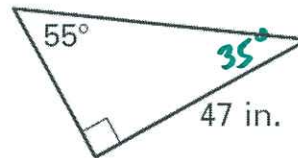
perimeter? Round your answer to the nearest tenth.



15) Find the perimeter of the triangle. Round to the nearest tenth.

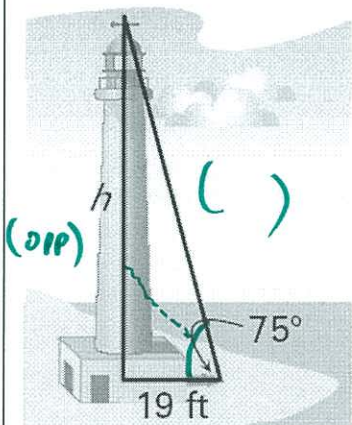


16) Find the perimeter of the triangle. Round to the nearest tenth.

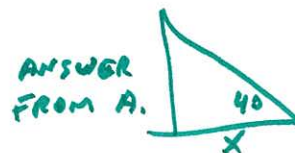


17. Use the figure below to answer the questions to the right.

a. At 2 P.M., the shadow of a lighthouse is 19 feet long and the angle of elevation is 75° . Find the height of the lighthouse.



b. At 4 P.M., the angle of elevation of the sun is 40° . Find the length of the shadow cast by the lighthouse



REPLACE 75° w/ 40°
AND NOW 19 ft
WITH X.

c. At 6 P.M., will the length of the shadow be longer or shorter than it was at 4 P.M.? Explain.

() USE PATTERN FROM A & B.